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ABSTRACT

This report summarizes Mid-Atlantic Eisenhower Consortium for Mathematics and Science Education outcomes over a 5-year period, from October 1, 1995 through September 30, 2000. Results are based on findings presented in previous reports to the Office of Educational Research and Improvement (OERI) as well as new analyses that cover the Consortium experience over the 5-year period. The outcomes of activities designed to meet objectives in the areas of collaboration, dissemination, training and technical assistance, focus on high-need schools, and performance benchmarks are described. (MM)

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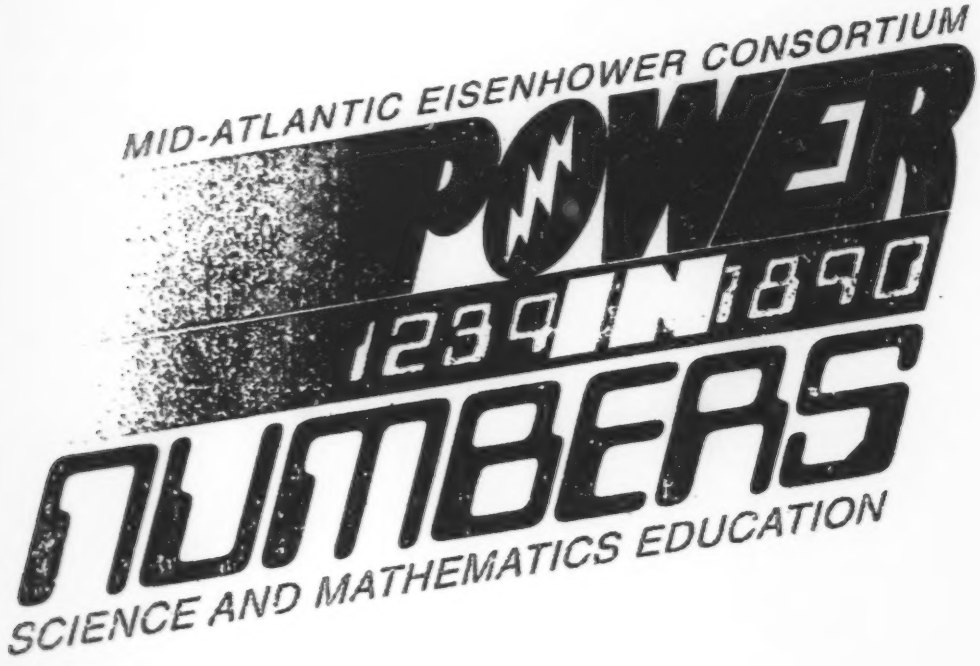
ED 458 120

THE MID-ATLANTIC EISENHOWER CONSORTIUM
FOR MATHEMATICS AND SCIENCE EDUCATION

RESEARCH FOR BETTER SCHOOLS

Final Grant Report
1995–2000



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MID-ATLANTIC EISENHOWER CONSORTIUM

Grant Final Report for
October 1, 1995 through September 30, 2000

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January 31, 2001

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I. OVERVIEW AND SUMMARY

The Mid-Atlantic Eisenhower Consortium for Mathematics and Science Education at Research for Better Schools (RBS) is one of the 10 regional consortia funded by the U.S. Department of Education, Office of Educational Research and Improvement. The Mid-Atlantic region includes Delaware, the District of Columbia, Maryland, New Jersey, and Pennsylvania. These regional consortia, in concert with the Eisenhower National Clearinghouse (ENC) at Ohio State University, support improvement in mathematics and science education throughout the nation.

Research for Better Schools, a private, non-profit educational R&D firm in Philadelphia, Pennsylvania, has been funded to operate the Mid-Atlantic Eisenhower Consortium since 1992. This is a final end-of-grant report; it summarizes the Consortium outcomes from October 1, 1995 through September 30, 2000, a five-year period. The results are based on findings presented in previous reports to OERI, as well as new analyses that cover the Consortium experience over this five-year period. Six previous reports were submitted covering the following time periods:

1. May 17, 1996 covering October 1, 1995-March 30, 1996
2. April 25, 1997 covering April 1, 1996-March 30, 1997
3. April 25, 1998 covering April 1, 1997-March 30, 1998
4. April 16, 1999 covering April 1, 1998-January 31, 1999
5. November 30, 2000 covering February 1, 1999-September 30, 1999
6. December 10, 2000 covering October 1, 1999-September 30, 2000

As can be seen, only three of the six reports covered 12-month periods; the others were six months, ten months, and eight months. This nonconformity occurred at the request of the funding agency in order to meet grant-award deadlines. The consequent varying number of months as the reporting base presents some difficulties in analyses that span reporting periods. In some cases, the results presented below use projected annualized figures to enable comparability across periods. In other cases, necessary cautions are noted for the reader's consideration in interpretation because of the irregular reporting periods.

Four primary sources of data were used in all of the Consortium evaluation reports. Each Consortium activity for the five-year period was described on an Activity Description Form and entered into the Consortia and Clearinghouse Descriptive Data System (CCDDS), which provides extensive quantitative data. Consortium evaluators also administered printed client surveys by mail in 1998 and 1999; these surveys yielded both quantitative and qualitative information. In 2000, an in-depth telephone interview was conducted with a sample of Consortium clients; it focused on qualitative impact information. Finally, the evaluators studied selected Consortium activities in more detail through observation and participant surveys. All evaluation activities were coordinated across the 10 Eisenhower Consortia and the Eisenhower National Clearinghouse by a national Evaluation Committee.

The Mid-Atlantic region is one of the most diverse in the nation, with both the most densely populated state (New Jersey) and the state with the most rural students (Pennsylvania). The Consortium's potential clients include all of the teachers and administrators involved in

mathematics and science instruction in the region. There are approximately 100,000 elementary teachers and 40,000 secondary mathematics and science teachers in over 10,500 school buildings. The Consortium's goal is to reach all these clients with the message about how mathematics and science education is changing, and with information resources to support their role in improvement. In addition, the Consortium reaches a subset of these clients each year with more in-depth products and services.

The Mid-Atlantic Consortium addresses three objectives: coordinating resources through collaboration among organizations, disseminating exemplary materials, and assisting educators to implement improved curriculum and instruction practices. These objectives are addressed through Consortium staff services in the region and nationally, and Consortium team professional development programs in each state. The Consortium publishes a print newsletter, *RBS Currents*, which is disseminated widely; has recently added an e-mail newsletter, *Riptides*; and maintains an Internet-based World Wide Web site. In conjunction with Consortium staff, the state teams design and conduct professional development and other activities which meet the needs in their states.

The outcomes of activities designed to meet these objectives are described very briefly in this section, as organized under the three objectives above, plus two other topics of concern – focus on high-need schools and performance benchmarks. In subsequent sections, greater detail is provided.

1. Collaboration

The Mid-Atlantic Eisenhower Consortium's approach to supporting mathematics and science education improvement is a very collaborative one. Working with a wide range of other organizations that can contribute resources is the strategy selected to scale-up the impact of the Consortium program over the large Mid-Atlantic region. A 25-member regional board sets the broad direction, and teams in each state actively engage over 50 individuals on a continuing basis in designing and carrying out improvement activities. Across the states, there were 137 team meetings during this reporting period. In addition, at least 77 percent of all Consortium activities involved support from collaborating organizations in delivering services to clients each year. This collaboration was judged to be valuable by clients, a large majority of whom indicated that it strengthened relationships, increased service coordination, increased access to resources, and leveraged resources.

2. Dissemination

The Mid-Atlantic Consortium's goal is to eventually reach all of the region's approximately 100,000 elementary teachers and 40,000 secondary mathematics and science teachers with improvement resources. Each issue of the *Currents* newsletter was received in every one of the region's 10,500 schools; an average of 42,658 copies of each issue were sent out, for a total of 383,918 over the five years. *Currents* focuses on improvement events and products available to educators, as well as descriptions of member activities. In response to requests emanating from *Currents* and other sources, as well as proactive dissemination, an additional 45,550 R&D-based

resource materials on average per year, or 273,298 in all, were delivered free to teachers and others interested in improving mathematics and science education.

Dissemination through electronic means is an increasingly effective way of delivering resources and services. In the last year, RBS' World Wide Web site received 667,246 accesses (page requests), thus reaching a wide audience. Over the five years, over 1,000,000 Web accesses were recorded, plus almost another 1,000,000 listserv communications. The Consortium also has established and maintained over a dozen listservs for improving communications and disseminating information.

These channels for disseminating resources thus have the capacity of reaching all 10,500 schools and 140,000 teachers of mathematics and science in the region. A large majority of Consortium clients have indicated that the products and resources have been of value to their work.

3. Training and Technical Assistance

Intensive support beyond the dissemination of materials is needed for educators to effectively implement exemplary mathematics and science curriculum and instructional practices. The Mid-Atlantic Eisenhower Consortium has resources to provide professional development and technical assistance for practitioners deemed to be of high priority by the regional board and state teams. Across the four states and the District of Columbia, the Consortium has supported activities that provided intensive professional development for 9,501 clients – most services involving multiple days, for a total of over 20,845 person days. Other activities focused on technical assistance services, with over 2,500 additional client contacts – most for multiple days.

Thus, as presently funded and designed, these intensive services have the capacity of engaging approximately 15 percent of the region's teachers over five years. A large majority of the clients have evaluated these services as aligned with standards, useful in improving instructional practice, useful in improving student engagement, and useful in improving student performance.

4. Focus on High-Need Schools

Across all services, the Mid-Atlantic Consortium gives priority to clients serving traditionally underserved and underrepresented students. This focus is built into the guidelines for delivering each service. As a consequence, most services take place in urban and rural settings. Documentation specific to this issue began in January 1998. Across all reporting periods, at least 57 percent of the participants in Consortium intensive activities worked in high-need schools and districts. In the last two years, this percentage grew to almost 80 percent. In addition, client survey respondents suggested that the services helped meet their needs.

5. Performance Benchmarks

OERI's Performance Indicators for the Eisenhower Regional Consortia have become an important means of assessing effectiveness since 1998. The Mid-Atlantic Consortium has

progressed from meeting the benchmarks for five of the 11 indicators in 1998 to meeting nine of them in 2000. The benchmark for intensity of activities – 60 percent being 12 hours or more – has not been met. The eleventh indicator, on student test score gains, has not been measured during this five-year period.

II. PROGRESS IN ACHIEVING OBJECTIVES

A. COLLABORATION

Collaboration is the heart of the Mid-Atlantic Consortium plan – the principal means by which the Consortium can help to address the needs and priorities in the region. Single agencies and organizations cannot have pervasive impact on their own. The Consortium strategy is to support its thousands of members in their improvement efforts through statewide teams; these teams can reach the entire mathematics and science community through their organizations, leveraged by Consortium resources. Few other programs identify collaboration in their mission, and no other has an across-state mandate to improve mathematics and science education. Regional collaboration is a unique feature of all the Eisenhower Consortia. The Mid-Atlantic Consortium currently engages a wide range of members in each state, mostly drawn from the following categories of organizations:

- Informal education entities – science centers, zoos, aquaria, museums, conservation centers, 4Hs, libraries, Saturday academies
- NSF Systemic Initiatives – state, urban, rural, local
- SEA Eisenhower and other state programs – higher education, K-12 professional development, mathematics and science frameworks
- OERI programs and other government agencies – Regional Educational Laboratories, Comprehensive Technical Assistance Centers, Regional Technology Centers, ERIC Clearinghouses, Star Schools, Department of Energy Projects, mathematics and science R&D centers
- Institutions of higher education – state university systems, independent teacher preparation institutions, networks of institutions
- Mathematics and science coalitions – state mathematics and science coalitions and alliances
- Professional associations – state chapters of the National Science Teachers Association (NSTA) and the National Council of Teachers of Mathematics (NCTM), other teacher and administrator associations
- Schools and networks – individual schools (public, parochial, and private), districts, intermediate units, school networks (such as Commonwealth Excellence in Science Teaching Alliance)
- Business and community – parent organizations, business roundtables, foundations, profit and non-profit firms

The benefits of collaboration include the leverage and potential for scaling-up provided by a large membership that collectively represents enormous resources for mathematics and science improvement. Extensive involvement of practitioners also enhances the credibility and usefulness of Consortium products and services. The collaboration mechanisms are a regional board, state teams, Consortium members, and a close relationship with the Eisenhower National Clearinghouse. The collaboration outcomes are summarized below.

1. Regional Board

A regional board has been convened to provide overall guidance for the Consortium. The 25 authorized members represent most of the categories listed above. There were five positions available for each of the Mid-Atlantic states and DC. They generally met twice a year. Each year the board reviewed the evaluation data and reports for the previous year and the proposed activities for the subsequent year. The board members provided valuable advice on prioritizing needs, use of resources, the OERI agenda items from the Interim Assessment in 1998, and other issues over the years.

2. State Teams

Teams of persons interested in mathematics and science education improvement have been formed and operationalized in each state. Over 50 persons participated in the state team activities, representing all of the categories of organizations listed above. Over the five-year grant, these teams were refined based on their experiences each year. They have been central actors in defining needs, priorities, and activities of the Consortium. They are integrally involved in designing and carrying out the Consortium program, and contributing the resources of their organizations. They meet approximately quarterly. Steering committees have been formed by some of the teams to manage the team's agendas and act on the team's behalf between meetings.

The Consortium teams in each state have continued to meet during each year, as listed in Table 1. Pennsylvania and the District of Columbia were the most active, meeting 56 and 28 times respectively. Also, the Pennsylvania Team has supported seven regional collaboratives for professional develc ment within the state. The regional collaboratives each sponsored coordinating meetings too, but they are not documented in this report. These collaboratives have been a significant focus of activity in Pennsylvania.

New Jersey has been the least active, meeting only 13 times over the five years. The New Jersey team schedule is partly due to a program of activities focused on supporting the SSI; these services are mainly technical assistance and planning, rather than more generalized meetings.

The Delaware and Maryland teams are both smaller in membership and more centralized – with the State Department of Education staff playing a key role. In these teams, the state agenda is reviewed for gaps in mathematics and science professional development in high-priority areas. The teams then design collaborative activities to fill these gaps.

Table 1
Consortium State Team Meetings

State/Year*	1996	1997	1998	1999	2000	Total
Delaware	5	5	5	3	4	22
District of Columbia	4	7	6	6	5	28
Maryland	2	6	4	3	3	18
New Jersey	4	4	3	1	1	13
Pennsylvania	15	14	9	6	12	56
Total	30	36	27	19	25	137

*Fiscal years – October through September, e.g., 1996=October 1, 1995-September 30, 1996

3. Consortium Members

The thousands of individuals and organizations that join in the activities of the Consortium are the broad front of leverage. Approximately 2,000 persons were added to Consortium membership per year, resulting in a total of over 18,000 members by the end of this five-year grant. Members are offered all Consortium products and services, and together they have the potential of reaching all relevant clients. Membership is invited in the Consortium newsletters, on the Web site, and at all Consortium-sponsored events.

4. Eisenhower National Clearinghouse

The Eisenhower National Clearinghouse for Mathematics and Science Education (ENC) continues to be a key partner in many activities of the Mid-Atlantic Eisenhower Consortium. ENC publications and products are distributed at most Mid-Atlantic Consortium exhibits and events, team meetings, and state and regional conferences. Over the five years, 42,104 ENC products were disseminated to Consortium clients. The Consortium publicizes ENC resources extensively throughout the region through the *Currents* newsletter; postings to the Web site and Consortium mailing lists; and announcements sent to mailing lists, forums, and Web sites maintained by other organizations in the region.

The Mid-Atlantic Eisenhower Technology Center (ETC), housed at the Franklin Institute, has served as this region's ENC Demonstration Site. Sponsored by ENC and operated in partnership with the Consortium, the ETC disseminates information about online, print, and multimedia resources available from ENC, the Consortium and its partners, and the national network of regional consortia. The ETC also serves regional clients by providing on-site demonstrations, training, and professional development activities for mathematics and science educators. The ETC offers demonstrations of online Web-based resources from ENC and the regional consortia, introductions to the Internet for mathematics and science educators, and a series of hands-on activities that enable classroom teachers to identify and incorporate Internet-based resources into their classroom instruction and into their own professional development.

Developing Eisenhower Access Centers throughout the region became an important activity in the last half of the grant period. Eisenhower Access Centers spread the work of ENC and the Consortium further throughout the region. Access Centers volunteer to provide outreach to local educators about ENC and the Consortium and to disseminate Clearinghouse and Consortium products. Access Centers are hosted by educational facilities which already disseminate materials and/or provide training and professional development activities for local mathematics and science educators. The Access Centers incorporate into their existing workscope the task of demonstrating and making available resources such as ENC Online and ENC publications and CD-ROMs, Consortium resources such as the online TIMSS Resource Center and the print TIMSS Sourcebooks, and information on Consortium conferences and team activities. The centers distribute information and resources from NASA, the National Science Foundation Curriculum Centers, the Annenberg/CPB Math & Science Project, Project 2061, NCTM's Standards 2000 Project, etc. Twenty-four Access Centers have been established at universities, libraries, education technology centers, intermediate units, and science centers.

5. Consortium and Clearinghouse Directors National Meetings

The Consortium and Clearinghouse directors convened four times each year. In addition to reviewing the work of each member organization and committee, the group met with representatives of national organizations such as NCTM (National Council of Teachers of Mathematics), NSTA (National Science Teachers Association), American Association for the Advancement of Science, and the Secretary's Mathematics Initiative.

The Mid-Atlantic Consortium director and communications specialist have been supportive of the Communications Committee, participating in all meetings and conference calls. This group develops communications products to represent the Eisenhower Consortia and ENC, including two annual national reports. The Consortium evaluator and director have been very active on the Evaluation Committee, also participating in all meetings and conference calls. This committee develops and oversees the CCDDS and client surveys, which resulted in the three national evaluation reports. These committees have met prior to each directors' meeting and much work has taken place between meetings.

B. DISSEMINATION

Assistance through dissemination is the means whereby information about the need for improvement in mathematics and science education and ways to make it happen are delivered broad scale to teachers, administrators, policymakers, and the public. The Consortium maintains large-scale print and electronic communication channels to deliver information products and services. These products and services can provide motivation for change, incentive to seek intensive assistance, and reasons to support improvement in schools. The dissemination plan includes print products, technology-based products and services, state conferences, and regional conferences.

The Consortium designs, develops, produces, and disseminates print materials in a large-scale manner to the whole range of potential clients. These materials contain the mathematics

and science reform message and offer resources which support mathematics and science education improvement in the classroom:

- *Currents* newsletter – The Consortium prepares approximately two issues per year, each delivered to all 10,500 school buildings in the region. The newsletter embodies the Consortium vision and emphasizes material and activity resources for mathematics and science improvement. Reader input is solicited.

- Professional association newsletters – Descriptions of Consortium activities and resources available are sent to all mathematics and science teacher associations, as well as administrator associations, in the region.

- Improvement materials – The Consortium identifies materials which meet specific needs and priorities of the region and to acquire them for free or low-cost distribution to Consortium members. Approximately 40,000 items are distributed through the mail and at conferences.

- Consortium brochure – A brochure inviting membership in the Consortium is prepared and updated for distribution through the state teams, conferences, and direct mail. Approximately 2,000 are distributed each year.

- Curriculum and instruction guides for teachers – Publications to help teachers find and use exemplary mathematics and science materials are prepared and disseminated.

The Consortium designs, develops, and maintains significant mathematics and science improvement resources for all clients who have access to the World Wide Web and to electronic mail. The Consortium currently maintains an extensive Web site which offers a large and growing collection of mathematics and science resources that reflect the Consortium's goals and priorities. The Consortium also sponsors a large number of subscriber e-mail lists for purposes of dissemination information and enabling collaboration among constituents and partners.

- Web-based resources – The Consortium provides educational resources on the following topics:

  - Exemplary and promising mathematics and science education curriculum and instructional practices
  - Professional development for mathematics and science educators
  - Technology and telecommunications
  - Mathematics and science education for all students
  - Curriculum standards and assessment
  - Informal centers and programs
  - Public Outreach and community involvement
  - TIMSS findings, products, and discussions

- Online communications – The Consortium provides Internet-based telecommunications services:

- Lotus Notes mailing lists maintained on the RBS host to support team communications, activity planning, and follow-up communications among Consortium clients, and dissemination of news about products and events.

- Additional public and private mailing lists maintained on the RBS host for regional and national audiences, which serve to distribute news and information from the Consortium and other sources.

- The Consortium maintains the ENC Technology Demonstration Center equipment and materials, as well as 24 Access Centers throughout the region, and provides continuing support to participants in training and professional development through its ETC electronic mail list.

The Consortium supports professional association conferences and uses them as a vehicle to disseminate the Consortium message and improvement resources. The Consortium proposes presentations for conferences of the science and mathematics teacher professional associations in each state and arranges for means to distribute resource materials. The Consortium also proposes presentations and disseminates resource materials at administrator professional association conferences in each state.

The Consortium designs and conducts region-wide conferences to meet regional needs. Each year, the Consortium sponsors at least one leadership conference for state team members that includes both state and regional sessions. Major purposes for the conferences include exploring themes of high current interest, providing professional development experiences for participants, and providing a forum for sharing and networking across states.

Dissemination outcomes are described below in terms of print products, technology-based products and services, state conferences, and regional conferences.

1. Print Products

The Consortium disseminates a large number of print materials, both proactively and in response to requests. The issues of *Currents* as listed in Table 2 went out to an average of 42,658 persons per issue and 383,918 total. This dissemination effort includes all school superintendents, principals, and mathematics and science department chairpersons in the region, as well as any teachers and the Consortium member list.

Table 2
Currents Newsletter Disseminated

Issue	Recipients
1. Fall/Winter 1995	19,850
2. Fall 1996	57,153
3. Spring/Summer 1997	54,044
4. Winter 1997-98	49,704
5. Spring/Summer 1998	48,518
6. Fall/Winter 1998-99	43,562
7. Spring/Summer 1999	37,027
8. Winter 1999-2000	40,061
9. Fall 2000	33,999
Total	383,918
Average	42,658

The *Currents* distribution network has been developed over the five years to include regular distribution via the Pennsylvania Intermediate Units; Maryland's county superintendents' offices; seven Consortium-sponsored collaboratives in Pennsylvania; the New Jersey Department of Education; New Jersey Small and Rural Schools Association; Delaware's Department of Education and state universities; the Philadelphia and Baltimore systemic initiatives; and the 24 ENC technology Access Centers across the region – created by the Consortium.

A campaign of press releases to professional association newsletters and other educational newsletters has been developed to publicize the Consortium conferences and other resources. Press releases announced the new products and many of the activities supported by the Consortium in the field.

In addition, 273,298 copies of over 50 other print and multimedia resources were disseminated in total, or approximately 45,000 each year as described in Table 3. TIMSS materials were widely disseminated throughout the region via conferences, announcements in *Currents*, and through the Consortium's dissemination network. ENC products, including publications and CD-ROMs, were a major part of this dissemination effort.

Table 3
Print Materials Disseminated

Dates	Recipients	Annualized Recipients
1. 10/1/95-3/30/96	43,994	87,988
2. 4/1/96-3/30/97	89,309	NA
3. 4/1/97-3/31/98	55,467	NA
4. 4/1/98-1/31/99	40,704	52,445
5. 2/1/99-9/30/99	28,986	43,475

6.	10/1/99-9/30/00	13,588	NA
	Total	273,298	
	Average	45,550	

Some of these print products were developed by the Mid-Atlantic Consortium. Reflecting its deep interest in TIMSS, the Consortium developed and published three TIMSS Sourcebooks – each organizing key presentations on results at one of the TIMSS grade levels. The Consortium also published a volume of TIMSS case studies. Finally, the Consortium developed and disseminated nationally *Internet Jones*, a popular guide to technology for teachers.

2. Technology-Based Products and Services

Through its News & Events feature, the Consortium Web site (at www.rbs.org/eisenhower) continues to provide educators with timely information on new publications and resources, upcoming events, and opportunities for teacher professional development; the online version of *Currents*, the Consortium newsletter, supplements this with additional information. The Consortium also maintains and updates the TIMSS Resource Center, a comprehensive collection of information and links to reports, summaries, documents, and analyses of TIMSS.

During the five years, the Consortium designed a series of improvements to its World Wide Web server and to the collections of mathematics and science improvement resources accessible there. Most activity has concentrated on refinements to Web site presentation and navigation, and on enhancing the quality of the information and resources selected for inclusion. The former activity has included the transition to a frames-based presentation with key Web site sections accessible to users through simple drop-down menus. This permits users to quickly view the content of each Web section and immediately select relevant items, without the need to load and scroll through larger Web pages. The Consortium pilot-tested and has now adopted database software that enables the instant creation, revision, and updating of Web pages by Consortium staff directly from their desktops, thereby improving the speed and efficiency with which information can be made available to online users.

The Consortium Web site provides clients with information about the Consortium and information about and/or links to a vast range of other online resources supporting systemic improvement in mathematics and science education. The content of the Web site has undergone a series of improvements to accommodate demands for more comprehensive information about Consortium activities and resources, Consortium state teams, the ENC Demonstration Center and Eisenhower Access Centers, and enhanced selections of Web-based resources for inclusion under key topical sections of the Web site (e.g., Professional Development, Informal Mathematics and Science Education). With desktop access to edit Consortium Web pages, the Consortium now easily maintains, updates, and enhances the quality of Web site content on a continuous basis.

The Consortium Web site received a total of 1,135,875 accesses (page requests from users) from October 1, 1995 through September 30, 2000 as seen in Table 4 below. The level of use increased substantially over the years, with a huge jump in the last year.

Table 4
Consortium Web Site Usage
October 1995-September 2000

Time Period	Requests for Pages	Annualized Requests
1. 10/1/95-3/30/96	32,714	65,428
2. 4/1/96-3/30/97	158,160	NA
3. 4/1/97-3/31/98	102,868	NA
4. 4/1/98-1/31/99	86,638	103,966
5. 2/1/99-9/30/99	88,249	132,374
6. 10/1/99-9/30/00	667,246	NA
Total	1,135,875	

Approximately a dozen electronic mailing lists are maintained on the Consortium's mail server to facilitate communication among Consortium members and clients. Lists range in number of subscribers from a dozen for small, limited-audience lists (e.g., IKEBoard for the Consortium's regional board members) to over 500 subscribers from across the U.S. and abroad (e.g., TIMSS-Forum). The lists enable the individual subscribers to post messages to all other subscribers by e-mailing them to a single list address. In all, close to 1,000,000 client contacts were made using these listservs over the five years. The mail lists in Table 5 are illustrative of those maintained, and can be used by addressing an e-mail message to the name of the list followed immediately by @rbs.org.

Table 5
Consortium E-mail Lists

- Delaware
  1. DEST – members of the Delaware Team
- District of Columbia
  2. DC-All – members of the District of Columbia Team
  3. DCSC – members of the DC Team Steering Committee
- Maryland
  4. MDSC – members of the Maryland Team Steering Committee
- New Jersey
  5. NJ-All – members of the New Jersey Team
  6. AMTNJ-Exec – executive board, Association of Math Teachers of New Jersey
- Pennsylvania
  7. PASC – members of the Pennsylvania Team Steering Committee
  8. PAST – members of the Pennsylvania Team

- Mid-Atlantic Region
  9. IKE – Consortium members
  10. IKEBoard – members of the Consortium regional board
  11. TIMSS-Team – Consortium members providing TIMSS training/workshops
  12. TIMSS-Forum – clients interested in TIMSS results and implications
  13. Riptides – clients interested in this monthly electronic newsletter

3. State Conferences

Consortium staff provide support to mathematics and science state professional associations both by presenting at conferences and by serving on association boards, executive committees, and planning committees. As seen in Tables 6a and 6b, Consortium staff have presented and disseminated materials at approximately 10 state conferences each year; staff also serve on the boards of approximately 10 state professional associations, as well as the New Jersey SSI.

Table 6a
State Professional Association Conferences

1. New Jersey Science Teachers Association
2. Philadelphia Association of Teachers of Mathematics
3. New Jersey Association for Education Technology
4. Maryland Association of Science Teachers
5. Temple University Middle School Forum
6. Pennsylvania Association for Supervision and Curriculum Development
7. Pennsylvania Association of Education Communication and Technology
8. Association of Mathematics Teachers of New Jersey
9. Pennsylvania Science Teachers Association
10. Delaware Instructional Technology Conference
11. New Jersey Science Supervisors
12. Pennsylvania Big Cities Conference
13. Pennsylvania Council of Teachers of Mathematics

Table 6b
State Professional Association Board Memberships

1. Delaware Council of Teachers of Mathematics
2. Delaware Math Coalition
3. Pennsylvania Council of Teachers of Mathematics
4. Pennsylvania Educational Research Association
5. LaSalle University (PA) Institute for the Advancement of Mathematics and Science Teaching
6. Association of Mathematics Teachers of New Jersey
7. New Jersey Math Coalition
8. New Jersey SSI Executive Board
9. New Jersey Science Supervisors Association
10. Maryland Council of Teachers of Mathematics

4. Regional Conferences

The Consortium sponsored eight regional conferences during the five years, as seen in Table 7. In the early years, the conferences were more general, containing a variety of content related to the Consortium state teams and program. Later, a focus developed on TIMSS as a learning opportunity and the resources available in NSF-supported curricula.

Table 7
Mid-Atlantic Regional Conferences

Date	Conference	Participants
1. February 1996	Consortium Regional Leadership Conference	73
2. May 1996	Regional Equity Conference	129
3. November 1996	Consortium Regional Leadership Conference	68
4. June 1997	Mid-Atlantic TIMSS Conference	90
5. June 1998	Mid-Atlantic TIMSS Conference	155
6. July 1998	Mid-Atlantic NSF Showcase	510
7. July 1999	Mid-Atlantic TIMSS Conference	210
8. July 1999	Mid-Atlantic NSF Showcase	230

C. TRAINING AND TECHNICAL ASSISTANCE

The teams in each state, consulting with Consortium staff, design intensive workshops and seminars, or other professional development resources, to meet the needs and priorities of their states; Consortium staff are integrally involved in the design and conduct of these activities. Priorities for content are based on the needs in each state, but alignment with state standards and assessment is always important, as is a focus on participants from high-need schools. In terms of scale, approximately 5,000 person days are intended, with follow-up for participants. Over time, the Consortium encouraged more intensive activities (i.e., 12 hours or more of engagement) and more focus on evidence of effectiveness.

This category of Consortium activities contains the most intensive services provided by the Consortium. These services are delivered in person, usually engage clients for more than a day, and employ the resources of several Consortium partners, in addition to the Consortium staff. The services are generally part of a state team plan, designed in light of the needs and priorities in each state. A great deal of effort has been put into focusing the teams on teacher and student impact, intensive activities, and clients in high-need schools. The Consortium activity application form is part of this effort, and in addition, staff have spent much time with teams and activity designers to help in their planning and to emphasize impact.

Technical assistance is the category of services where the Consortium provides expertise to help with a client-defined problem, usually delivered by Consortium staff. These services are often initiated in response to a client request, but the Consortium also offers some services proactively, such as TIMSS seminars and the Middle School Math Project.

Approximately 40 training activities have been co-sponsored with partners each year, and approximately 50 technical assistance services have been provided each year across the Mid-Atlantic states. The outcomes are described below for each category of service.

1. Training

Representative topics of the professional development activities are presented in Table 8. Each activity was co-sponsored by one or more partners of the Consortium, thus using fiscal and staff leverage to reach more clients. In the earlier time periods, the topics tended to be more general and the activity duration shorter, often only one day or less. Over time, the Consortium's emphasis on proven practices as topics and at least two-day duration changed the content of these professional development activities.

The quantitative aspect of Consortium professional development is depicted in Table 9. As can be seen, many educators – almost 10,000 – were engaged over the five years. Since many activities had a multiple-day duration, the total number of participant days exceeded 20,000. The participant-day data were not available for the first two reporting periods, but there was a definite trend toward longer, more intensive activities over the years. The overall average activity length increased from 2.4 days to 3.8 days, to 4.9 days before falling back to 2.8 days in the last period. The Consortium emphasis on intensity had some effect. The last year's exception to this trend has no easy explanation at this point.

There was a general downward trend in the number of participants over time as the intensity per participant increased. There seemed to be a tradeoff – fewer participants for greater intensity. The resources available to the Consortium remained constant over the years, i.e., no increases.

There was substantial unevenness in scale of activities across states and across years. Pennsylvania always had more participants than the other states, but the prevalence among the others shifted from period to period. The New Jersey professional development activities were lower in volume than would be expected from their relative population of students and teachers and consequent allocation of Consortium resources. This was because much higher technical assistance attention was accorded to that state. Delaware and Maryland had relatively large numbers of participants because activities tended to be highly leveraged.

2. Technical Assistance

Representative topics of technical assistance activities are presented in Table 10. These activities have fewer participants than training activities, and also tend to be shorter in duration. These activities account for over 500 client contacts each year, and are very important in reinforcing the value of the Consortium among educators in the region.

As is suggested by Table 10, more technical assistance has been delivered in New Jersey and DC than the rest of the states. This reflects differences in the needs for service among the states, and consequent differences in consortium operations. For example, the New Jersey SSI and the DC Public Schools had readily identified needs and requests for technical assistance. A review

Table 8
Sample Training Topics

Dates \ State	DE	DC	MD	NJ	PA
1. 10/95-3/96	• Math Conference • Science Conference	• Systemic Initiative (MSTI) Conference	• Science Week	• (None)	• EQUALS • Informal Science • Science Standards
2. 4/96-3/97	• Math Conference • Science Curricula	• MSTI/USI Institutes • Mathematics Workshop	• Algebra • Principals Workshop • Insect Science	• New Teachers Institutes • Marine Science (MARE)	• Family Math and Science • EQUALS • DASH and FAST
3. 4/97-3/98	• Smithsonian Math Connections • Biology and Chemistry Lab Technology • Core Plus Math • Science Van	• CD-ROM Workshop • Elementary and Secondary Leadership • Internet Workshop • Annenberg/CPB Math	• Annenberg/CPB Math • Core Learning Goals • Graduate Fellows	• New Teachers Institute • Marine Science (MARE) • SSI Conference • FACETS and GEMS	• Geometer's Sketchpad • Core Plus Math • FAST • Science Standards
4. 4/98-1/99	• Science Van Workshops • Core-Plus Math • Investigations Training	• Annenberg/CPB Math • TIMSS and SAT-9 • NSF Curriculum Showcase	• TIMSS Seminar • Core Learning Goals • Science Assessment	• New Teachers Institute • Marine Science • Science for Special Needs	• Science Technology and Society • Maple and Minilab Training • FOSS • EQUALS
5. 2/99-9/99	• Science Van Workshops on Biology, Chemistry, Probes, and Curriculum Development	• College Prep Math • Everyday Math • Mathematics Standards • Science Standards • Learning from Assessment	• Model for School Readiness • Principals Academy • Calculator Workshop • Item Writing	• Science for Students with Disabilities • Marine Science • New Teachers Institutes	• DASH • Algebraic Thinking • Science, Technology, and Society • Internet Institute
6. 10/99-9/00	• Science Van Workshops • Standards-Based Math	• Learning from Assessment • Science Standards	• Model for School Readiness • Math Preservice • Science Supervisors • Early Childhood Math	• Science for Students with Disabilities • Marine Science • New Teachers Institutes • Interactive Math	• T^3 • Virus Hunters • TIMSS and Instruction • Graphing Calculators

Table 9
Numbers of Training Participants*

Dates \ State	DE	DC	MD	NJ	PA	Total
1. 10/95-3/96	746 (NA)	120 (NA)	100 (NA)	0 (NA)	95 (NA)	1,061 (NA)
2. 4/96-3/97	493 (NA)	562 (NA)	202 (NA)	51 (NA)	1,009 (NA)	2,317 (NA)
3. 4/97-3/98	214 (1,004)	324 (299)	299 (849)	160 (631)	662 (1,193)	1,659 (3,976)
4. 4/98-1/99	261 (1,400)	109 (330)	405 (1,000)	208 (800)	718 (3,000)	1,701 (6,530)
5. 2/99-9/99	51 (202)	226 (1,363)	309 (804)	191 (1,009)	437 (2,561)	1,214 (5,939)
6. 10/99-9/00	357 (900)	61 (200)	489 (1,000)	148 (1,000)	494 (1,300)	1,599 (4,400)
TOTALS	2,122 (3,506)	1,402 (2,192)	1,804 (3,703)	758 (3,440)	3,415 (8,054)	9,501 (20,845)

*The actual number of participants is given, followed in parentheses by the number of participant days, which is the actual number of participants times the number of activity days summed for each activity.

Table 10
Sample Technical Assistance Topics

Dates \ State	DE	DC	MD	NJ	PA
1. 10/95-3/96	• Math Coalition • Tech Corps	• Systemic Initiative (MSTI)	• Science Week	• Public Outreach • Math Framework • State Science Standards	• EQUALS • Info Highway
2. 4/96-3/97	• Project 2061/SSI • SEA Retreat Public Outreach	• MSTI/USI • Technology Task Force • Public Outreach	• Baltimore USI • Math and Science Coalition	• SSI Evaluation • Science Framework • SSI Conference	• Rural Schools • Equity
3. 4/97-3/98	• Instructional Tech • Math/Science Resource Center	• Mini-Village on the Mall • Technology Use • Public Outreach	• Website Development • Annenberg/CPB Math	• SSI Evaluation and Planning • FANS Public Outreach • Science Framework	• T^3 • Philadelphia USI • IU Curriculum Coordinators
4. 4/98-1/99	• Teacher Enhancement	• Teacher Enhancement	• Preservice Science Standards	• SSI Evaluation and Planning • Paterson School #2 • Camden LEAP Academy Technology • FANS Materials	• PD Needs Survey • SEA Math Textbook Evaluation • Philadelphia SD
5. 2/99-9/99	• Science Van	• Standards Specialists • Title II Report • DC ACTS Planning	• Title II Report	• SSI Evaluation and Planning • Secondary Science Task Force • Paterson School #2 • Science Coalition	• SEA Math Evaluation Committee • TIMSS and Policy • Instructional Technology
6. 10/99-9/00	• Science Van	• Middle School Math • Middle Grades Task Force	• Science Supervisors • MAST • Middle School Math	• SSI Evaluation and Planning • Middle School Math • Science Coalition • SEA Technology Grants	• Middle School Math • Governor's Math Institute • NASA Science Project

of the topics in Table 10 shows both the priorities prevalent in the states during the reporting periods and the kinds of expertise available from the Consortium.

D. FOCUS ON HIGH NEEDS SCHOOLS

Across all services, the Mid-Atlantic Consortium gives priority to clients serving traditionally underserved and underrepresented students. This focus is built into the guidelines for delivering each service. As a consequence, most services take place in urban and rural settings. Documentation specific to this issue began in January 1998. During this reporting period, from 57 to 80 percent of the participants in Consortium activities worked in high-need schools and districts. In addition, client survey respondents suggested that the services helped meet the needs in high-need schools.

Since the Consortium does most of its work with partners, it often does not have complete control over who is recruited to participate in professional development events. Reinforcing the focus on high-needs schools has been an emphasis of Consortium staff working with partners. The results did meet the performance indicator benchmark in two of the three years when data were available, but there is some variation among states. Continuing improvement is still a goal.

E. PERFORMANCE INDICATORS REPORT

Quantitative indicators of performance related to the Mid-Atlantic Eisenhower Consortium activities along with those of the other consortia and the Clearinghouse have been under development by the U.S. Department of Education for the last few years. A set of key indicators was submitted in February 1998 in the Department's overall FY 1999 Annual Plan. An expanded set was conveyed to the consortia as part of their 1999 annual report package.

While the performance indicators are still subject to revision and were not designed specifically to match the national network's evaluation designs or those of each individual consortium, the data reported here provide some results that speak to the indicators. This section presents an overview of the results selected to represent performance in FY 1998, 1999, and 2000, then a description of how each result was derived.

1. Overview

Table 11 gives the overview across the indicators. On the 11 indicators used by the Consortium, one was not measured during any of these reporting periods. Of the remaining 10, only five benchmarks were met in 1998; whereas, nine were met in 2000. This is evidence of significant overall growth with respect to these measures and a high level of performance.

The 60 percent standard for the proportion of TA activities that were intensive would have been attained if only training activities had been considered separate from technical assistance. (Training and technical assistance activities are combined in the indicators.) The Indicator 1.2 benchmark was exceeded for intensive training with approximately 80 percent of the activities lasting 12 or more hours, but only approximately 30 percent of the technical assistance activities hit the mark. The combined result falls short of the standard.

Table 11
Mid-Atlantic Performance Indicator Summary

Indicator	Standard	Data Source	1998 Results	1999 Results	2000 Results
1.1 TA* aligned with standards	80% of participants report	Survey	✓(97%)	✓ (99%)	✓(99%)***
1.2 TA intensity	60% of activities are 12+ hours	CCDDS	X (42%)	X (53%)	X (54%)
1.3 Intensive TA improves practice**	80% of participants report	Survey	✓(89%)	✓(95%)	✓(95%)***
1.4 Intensive TA improves student performance**	80% of participants report	Survey	✓(89%)	✓(90%)	✓(90%)***
1.5 Intensive sites improve student scores	Measurable improvement	School or district assessments	NA	NA	NA
1.6 Training of trainers produces training of others	80% of participants report	Survey	✓(82%)	✓(87%)	✓(87%)***
1.7 Intensive TA targeted on at-risk	70% of participants report	CCDDS	X (57%)	✓(80%)	✓(79%)
1.8 Activities involve collaborators	80% of activities	CCDDS	X (77%)	✓(80%)	✓(82%)
1.9 Collaboration adds value	80% of team and network members report	Survey	X (61%-78%)	✓(83-96%)	✓(83%-96%)***
2.1 Resources disseminated	10% annual increase in print and/or Web hits	CCDDS	X (-2% Print +2% Web)	X (-14% Print +27% Web)	✓(-29% Print +404% Web)
2.2 Products have utility***	50% of participants report	Survey	✓(78%)	✓(96%)	✓(96%)***

*TA includes technical assistance and training.
**Indicator refers only to intensive subset of activities (1.2), but results here are for all activities.
***Results are described in terms of the percentage of Consortia and ENC products that contributed "moderately" or "significantly" to improving the work of recipients.

Dissemination of print resources decreased overall over the years. Dissemination of resources via the Web increased steadily, so the net gain far exceeded the combined benchmark of ten percent by the end of the grant.

2. Individual Indicators

Each performance indicator is depicted below, along with the desired benchmark and results from the activity database or the participant survey.

1.1 At least 80 percent of participants in Consortium technical assistance activities (including training) will report that the content is explicitly aligned with national or state content and performance standards. RESULT: At least 97 percent of the survey respondents indicated that the content of training or technical assistance was moderately or extensively aligned with standards (Table 11).

1.2 At least 60 percent of Consortium technical assistance (includes training) will be 12 hours or more in duration. RESULT: At least 42 percent of the combined training and technical assistance activities were 12 hours or more; over the years 76, 88, and 80 percent of the training activities and 19, 28, and 38 percent of the technical assistance activities met this standard (from the CCDDS activity database).

1.3 At least 80 percent of the teachers, administrators, and providers of professional development who participate in the Consortium's continuing technical assistance will report improvement in their practice. RESULT: At least 89 percent of the survey respondents indicated that the training and/or technical assistance was moderately or extensively useful in improving their instructional practice (Table 11). Respondents represent all technical assistance. The "continuing" subset could not be disaggregated.

1.4 At least 80 percent of the teachers who participate in the Consortium's continuing technical assistance will report improvements in student engagement and/or student performance. RESULT: 90 percent of the survey respondents reported that the training and/or technical assistance was moderately or extensively useful in improving student engagement and at least 89 percent reported that the training and/or technical assistance was moderately or extensively useful in improving student performance (Table 11). Respondents represent all technical assistance. The "continuing" subset could not be disaggregated.

1.5 Assessment scores (e.g., classroom, district, or state assessments) of students who have been enrolled for at least one year in a mathematics and science program will show improvement. RESULT: No relevant data were available for this indicator.

1.6 At least 80 percent of participants in Consortium training of trainers activities will go on to provide professional development or technical assistance based on the assistance they received from the Consortium. RESULT: At least 82 percent of those trained reported providing assistance to others as a result (Table 11).

1.7 At least 70 percent of the district and school staff who participate in the Consortium's continuing technical assistance will work in districts or schools with a majority of students

who are Title I eligible. RESULT: At least 57 and up to 80 percent of the LEA participants in intensive activities indicated working in schools serving a majority of at-risk students (from the CCDDS activity database. Eligibility for at-risk included Native American, Limited English, rural, and free/reduced lunch.

1.8 At least 80 percent of Consortium activities will include collaborators from one or more stakeholder groups in planning, product development, and/or service delivery. RESULT: At least 77 and up to 82 percent of all activities involved at least one collaborator (from the CCDDS activity database).

1.9 At least 80 percent of the members of Consortium teams, board, or planning committees will report that value was added in one or more of the following ways: strengthening relationships, increasing service coordination, increasing access to resources, or leveraging resources. RESULT: 76 to 96 percent reported improved relationships, 61 to 93 percent reported increased coordination of services, 78 to 96 percent reported increased access to resources, and 74 to 96 percent reported leveraging of resources for greater impact (Table 11).

2.1 The total number of Consortium contacts with customers by print and/or "hits" on electronic sites will increase by 10 percent annually. RESULT: A continuing decrease in print contacts has been balanced by a large increase in "hits" on the Website to net combined results of 294 percent in the final grant year (from the CCDDS database). This does not include contacts via Consortium listservs.

2.2 A majority of the recipients of Consortium products and resources will report that they have contributed to improving their work. RESULT: At least 78 percent and up to 96 percent of the participants indicated that Consortium products and resources were of good to excellent value to their work (Table 11).

III. LESSONS LEARNED

RBS evaluation staff have tracked the progress of the Mid-Atlantic Consortium in carrying out its mission and accomplishing its goals over the past five years, as well as assessed the impact of the Consortium's work on clients' knowledge, skills, and ability to work more effectively to improve mathematics and science education in the Mid-Atlantic region. Past evaluation reports have focused on the results of the process and impact evaluation. This report focuses on key lessons about how the Consortium has worked most effectively to have the greatest impact on mathematics and science education in the region. Two lessons are drawn from the major objectives of the Consortium: to provide intensive and continuing professional development and to disseminate information about exemplary and promising practices in mathematics and science education. A final discussion focuses on learnings about Consortium operations.

A. INTENSIVE AND CONTINUING PROFESSIONAL DEVELOPMENT

When evaluation staff began systematically recording Consortium-sponsored professional development and technical assistance in 1997-98, the Consortium engaged in a total of 285 activities, of which 90 were given a first priority of professional development. Forty-three of those professional development activities (48 percent) were considered to be intensive, lasting for 12 or more hours. In 1998-99, the Consortium engaged in a total of 174 activities, of which 41 were professional development and 36 (88 percent) were intensive. In the fifth year of the grant, the Consortium conducted 153 activities, of which 40 were professional development and 32 (80 percent) were intensive. This information is from the CCDDS. Clearly there was a shift in the final two years to conduct professional development activities of greater intensity. This increase in intensive professional development reflected a purposeful change in the Consortium's strategy for coordinating and leveraging resources through the state teams.

The Consortium also conducted annual assessments of needs and priorities of the states and region, and learned that there was an overwhelming need for quality professional development. The Consortium stressed that quality professional development had to focus on building teachers' science and mathematics content and pedagogy aligned with state and national standards, and had to focus on improving student achievement. The Consortium designed a process for assisting state teams in the identification and delivery of professional development that was of longer duration, featured standards-based mathematics and science programs and curricula, and had data that indicated improved student achievement. By 1998-99, more than half of the long-term technical assistance contacts in the field focused on helping to plan professional development.

Another finding related to professional development over these three years was an increase in the focus on student assessment from none to 19 percent of the professional development activities. This was the direct result of the Consortium's increased dissemination of the TIMSS findings and implications in two regional conferences and increased interest from districts to include TIMSS findings in their professional development.

In terms of impact, a specific case drawn from client interviews illustrates the role the Consortium has played in professional development by creating networks and increasing access

to resources. A member of one state team who was affiliated with the state education department recently discussed the unique contribution of the Consortium. Through the state team, the Consortium "opened and crossed boundaries [the state department of education] could not have brought off." He further explained that the Consortium staff, with expertise and no self-serving agendas, "created cooperation and collaboration across the state" that resulted in "a common vision that helped define training and support through networking." Through the state team, new regional collaboratives (including several counties) were established, and already existing collaboratives were supported to deliver high quality professional development (i.e., that helped others to implement curriculum aligned with state standards, to implement instructional practices to attain state standards, to implement assessment aligned with state standards, and to help improve instructional practices in science).

The most important outcome in this case was the "positive cooperation across the regions [within the state]." Prior to the state team, the intermediate education units responsible for much of the professional development in the state tended to "stay within their own lines, but now they have much more collaboration in delivering professional development." The Consortium state team has created collaboration among faculty at state colleges and universities, intermediate units, and schools, especially in science professional development, since science specialists were not located in every region of the state. There has been an "enormous amount of planning involved in the regional delivery of professional development when the various providers of professional development came together." Through the increased access to resources and experts in the region, more teachers have been reached for longer periods of time, which "raises the skills of the teachers to get the students more involved." To substantiate his comments, this interviewee reported doing a feasibility study that compared 200 teachers who participated in team-sponsored professional development with a random selection of non-participants and found significant differences in student engagement, curiosity, and active participation.

Although "establishing alliances to deliver professional development to rural and poorer schools" was considered one of the most significant outcomes, it was recognized that the team could do a better job meeting the needs of at-risk, underrepresented, and/or underserved students. Despite active efforts to engage more urban teachers in professional development, participation has fallen short of expectations. This is a challenge area where the Consortium has made some progress in the past three years. The percent of teachers in high-needs districts participating in intensive professional development has increased from 57 percent to 79 percent. This increase has been variable among the states within the Mid-Atlantic region, but all have demonstrated increases. Table 12 presents the distribution of intensive professional development activities and the percent of high-needs participation for the state teams subset of professional development activities over the last three years of the grant.

Table 12
High-need School Participation in
Intensive Professional Development Activities

Year		DE	DC	MD	NJ	PA
1997-1998	PD Activities	13	7	16	16	42
	Intensive	11	2	10	3	15
	High-Need	76%	97%	59%	19%	54%
1998-1999	PD Activities	5	7	9	9	15
	Intensive	4	6	8	5	13
	High-Need	55%	97%	75%	52%	80%
1999-2000	PD Activities	5	3	13	8	11
	Intensive	5	2	10	6	9
	High-Need	98%	100%	79%	64%	72%

In summary, the lesson learned is about how the Consortium can most effectively encourage mathematics and science educators to deliver high quality professional development: through developing and supporting collaborations within each of the states, providing technical assistance to the teams that assists them with planning through a proactive structured process and providing increased access to resources (both expertise and materials) within their states and across the Mid-Atlantic region.

B. DISSEMINATION OF INFORMATION

One of the most dramatic and exciting changes to occur over the past five years is the increased use of electronic media to disseminate information. When the Consortium first assembled and met with mathematics and science educators across the region in 1994-95, states and districts were just beginning to explore Internet access, and the World Wide Web was in its infancy as a tool for educators.

By 1997-98, the Consortium had established a Web site and was actively using electronic listservs to communicate to its members. The 1997-98 CCDDS documented three dissemination activities that involved one electronic method of contact. By 1998-99, the Consortium more than doubled the media used for electronic dissemination, and doubled the media again in 1999-2000, with the Web site, seven listservs, and eight electronic newsletters. Table 13 shows the growth of the electronic dissemination media for the past three years.

Table 13
Electronic Dissemination Media

Medium	1997-1998	1998-1999	1999-2000
Consortium Web site	1	1	1
Team listservs		5	5
Regional listservs		2	2
Riptides electronic newsletter			8
TOTAL	1	8	16

The Consortium's decision to increase the use of electronic dissemination through content-rich listservs, an electronic newsletter, and its Web site has motivated clients to gain access. The TIMSS Forum listserv has increased its subscription numbers from 155 in 1998 to 643 in 2000. The number of "hits" to the Web site has increased substantially and the number of print products disseminated has decreased. From 1999 to 2000, the number of Web hits increased by over 400 percent and print dissemination decreased by 20 percent.

Seventeen percent of the professional development that occurred during 1997-1998 included use of the Internet and demonstrations of how to access mathematics and science resources on the Web. By the fifth year, no professional development focused on the basic use of the Internet. Instead, the Consortium emphasized standards-based intensive professional development with the integration of technology rather than the previous introductory or "one-shot" Internet workshops.

While the use of electronic dissemination has increased, a challenge remains for the Consortium to determine who is actually receiving the information and whether the information is relevant and useful to the recipients. Evaluation staff made an attempt to assess the impact of the electronic media in the 1999 client survey by including the TIMSS-Forum listserv along with five print products and two CD-Roms. Slightly more than a third of the respondents had accessed the listserv, but more than half of those had accessed it more than four times, and 60 percent had found it made a moderate to significant contribution to their work. In comparison, more than two-thirds of the respondents had received the Consortium's printed newsletter and slightly more than half found it made a moderate to significant contribution to their work. At this point it is not clear what the cost-benefits are to print versus electronic media.

Consortium and evaluation staff are currently planning an expert panel assessment of the quality of the Web site and a utilization survey of the Consortium listserv members. An informal assessment of use indicates that some team listservs are more active than others, but more data are needed to understand the differences in activity.

As the Consortium moves into the next five years, even more use of the Web-based dissemination is anticipated. There is a need to become more informed and sophisticated in tracking who is receiving the information and what the impact of the information is. The desirable goal is to reach as many constituents as possible with relevant and useful information, regardless of the medium.

C. CONSORTIUM OPERATIONS

The most global learning from the Eisenhower Regional Consortia experience is that moderately funded (approximately $1,500,000 each annually) entities with expansive mandates can establish themselves and survive as productive members of the mathematics and science community. This finding may seem obvious in 2001, but it was not so predictable in 1992 when the Consortia were first funded. Just gaining "a place at the table" within this already well-defined community is an accomplishment that is attested to by the Consortia advisory group membership, partners, and client evaluations.

As the survival challenge was being met, the challenge of providing services that are both broad scale and intensive was undertaken. In scale, the Mid-Atlantic Consortium results show an increasing outreach to educators over the years through print and electronic media, to a cumulative total in excess of 2,500,000 client contacts. This shows the capacity of a small entity to potentially reach all mathematics and science educators in the region. As measured by the OERI performance indicators, this outreach both meets the benchmark for scale and is of value to recipients.

Tradeoffs have been necessary to achieve this capacity. Substantial resources have been put into dissemination media; they could have been used for more in-person services. Also, electronic media were given increasing precedence over print media for delivery of resources because use can be scaled up without proportional increases in cost. As a result, the Consortium budget did not increase, but outreach to clients did.

Broadscale dissemination can deliver the message about mathematics and science improvement and can inform clients about the resources they will need to implement improved practices and curricula. But more intensive, in-person professional development and technical assistance is needed to make improvement a reality in classrooms. The Consortium collaborates with many partners to provide such assistance. In the Mid-Atlantic region, over 10,000 educators have been reached with these services, most in activities lasting two or more days. This shows the capacity of a small entity, in concert with many partners, to provide intensive assistance to a significant subset of the potential client pool. As measured by the OERI performance indicators, these services are of high quality, improve practice, and impact student performance.

Tradeoffs have been necessary in this arena too. In order to increase the intensity of in-person services without increases in costs, the number of clients reached has decreased. Also, as one of many sponsoring partners, the Consortium "brand" on services is less apparent to clients than it would be if the Consortium were sole sponsor.

Mid-Atlantic Consortium impact on clients has shown both breadth and depth, growing in scale without increases in budget. The question of how far demand can be increased on a static budget without eroding critical mass is a major one for the future of the Eisenhower Regional Consortia over time.